# Pranjal Sahu


**Contact Information**

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**Interests**

Machine Learning, Computer Vision, Medical Imaging.

**Education**

**Ph.D. in Computer Science, Stony Brook University, 2021**

Dissertation Topic: Synthetic Data for Deep Learning in Medical Imaging
Advisor: Dr. H. Qin

**Indian Institute of Technology Kharagpur, GPA: 8.35**

B.Tech.(Hons) in Computer Science, 2013

**Skills**

Python, C++, C, Matlab, Pytorch, Keras, Tensorflow, OpenCV, Numpy, Sklearn, Android Development, Ruby on Rails, PostgreSQL, Dask, Spark, Git

**Internships**

**Siemens Healthineers**, Malvern, PA. (2020)
Segmentation of Lung CT in presence of severe pathologies. Improved recall of Tumor voxels from 0.56 to 0.87 and published the work in J-BHI journal.

**Siemens Healthineers**, Malvern, PA. (2019)
Large lung nodule detection in Siemens Syngo CT CAD.

**Brookhaven National Laboratory**, Computational Science Initiative (2017)
Autonomous Infrastructure for Transition Prediction.

**Work Experience**

**Kitware**, Senior R&D Engineer, Carrboro, NC, USA. (June 2021-current)
Deep learning applications in medical imaging ex. volume segmentation (Monai), point-set registration (ITK, VTK), Dask support for ITK data structures like meshes, images.

**Oyo Rooms**, Software Developer, Gurgaon, India. (2015-2016)
Ruby on Rails backend developer, handled consumer facing iOS and Android APIs.

**HT Media**, Data Scientist, Gurgaon, India. (2015-2015)
Used Spark and HBase to create APIs for a real time mobile analytics dashboard.

**Selected Publications**

**P. Sahu**, V. S. Kumar, H. Qin. *Stabilized Semi-Supervised Training for COVID Lesion Segmentation,* **BMVC**, 2021

**P. Sahu**, H. Huang, W. Zhao, H. Qin. *Interactive Smoothing Parameter Optimization in DBT Reconstruction using Deep learning,* **MICCAI**, 2021

**P. Sahu**, Y. Zhao, P. Bhatia, L. Bogoni, A. Jerebko, H. Qin. *Structure Correction for Robust Volume Segmentation in Presence of Tumors,* IEEE Journal of Biomedical and Health Informatics, **J-BHI**, 2020

**P. Sahu**, D. Yu, M. Dasari, F. Hou and H. Qin. *A Lightweight Multi-section CNN for Lung Nodule Classification and Malignancy Estimation,* IEEE Journal of Biomedical and Health Informatics, **J-BHI**, 2018.

**P. Sahu**, D. Yu and H. Qin. *Apply lightweight deep learning on internet of things for low-cost and easy-to-access skin cancer detection,*, **SPIE**, 2018 **(Best Demo Award)**.

**Honors and Awards**

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|---|---|
| 2018 | Best Demo Award in SPIE Medical Imaging Conference |
| 2016 | Computer Science Chairman Fellowship, Stony Brook University |
| 2005 | Represented home state in National Children Science Congress |

**Invited Talk**

*Deep Learning applications in Medical Imaging*, at Bell labs, Murray Hill (2019).

**Other Publications**

**Pranjal Sahu**, Jared Vicory, et. al, *Wavelet Guided 3D Deep Model to improve Dental Microfracture Detection*, **MICCAI**, AMAI Workshop, 2022.

**Pranjal Sahu**, Thomas Hastings Greer, et. al, *Reproducible Workflow for Visualization and Analysis of OsteoArthritis Abnormality Progression*, **QMSKI**, 2022.

**P. Sahu**, S. Gerber, Q. Zhao, T. Nguyen, M. Mccormick, B. Paniagua and J. Vicory. *Thin shell demons for dental scan registration*, **SPIE**, 2022.

J. Vicory, **P. Sahu**, H. Wee, H. Nam, A. Chopra, S. Reid, G. Lewis, S. Arikatla. *Automated fractured femur segmentation using CNN*, **SPIE**, 2022.

C. Zhan, M. Ghaderibaneh, **P. Sahu**, H. Gupta. *DeepMTL Pro: Deep Learning Based Multiple Transmitter Localization and Power Estimation*, **Pervasive and Mobile Computing**, 2022.

M. Dasari, A. Bhattacharya, S. Vargas, **P. Sahu**, A. Balasubramanian, S. Das. *Streaming 360 degree Videos using Super-resolution*, IEEE **INFOCOM** 2020.

**P. Sahu**, H. Huang, W. Zhao, and H. Qin. *Using virtual digital breast tomosynthesis for de-noising of low-dose projection images,* International Symopsium on Biomedical Imaging, **ISBI** 2019.

X. Duan, **P. Sahu**, H. Huang, W. Zhao. *Scatter correction with deep learning approach for contrast enhanced digital breast tomosynthesis (CEDBT) in both cranio-caudal (CC) view and mediolateral oblique (MLO) view*, **IWBI** 2020 **(Oral)**.

N. Song, D. Craciun et al. *Protein Shape Retrieval,* Eurographics Workshop on 3D Object Retrieval, 3DOR 2017.

**Talks**

*Lightweight Deep Learning on Internet of things* at SPIE, Houston (2018).

**Reviewer**

- ❑ MICCAI
- ❑ Medical Physics
- ❑ Journal of Medical Imaging (JMI)
- ❑ Journal Of Computational Science
- ❑ Ultrasonics Journal
- ❑ Nature Scientific Reports

**Service**

Mentored Rutwik Palaskar (MIT ADT University, India) under the mentorship program at Machine Learning for Health (ML4H) workshop at NeurIPS 2020 on Oral Cancer detection work using pathology images.

**Graduate Coursework**

- ❑ Computer Graphics
- ❑ Artificial Intelligence
- ❑ Computer Vision
- ❑ Analysis of Algorithms
- ❑ Convex Optimization
- ❑ Computer Networks

**Extra curriculars**

- ❑ Silver medal in Inter Hall Thermocol and clay modelling at IIT Kharagpur
- ❑ Member of Azad Hall of Residence Fine Arts team at IIT Kharagpur

**References**

Available on Request.